CLAIMS

1. An electromotive drive, with at least one fan wheel (2) which can be driven by an electric motor (1),

- wherein an electromagnetic slip coupling dependent on the motor speed is arranged between the motor shaft (3) and the freely rotatably mounted fan wheel,
- wherein an electromagnetic speed limiting and governing device which limits the delivery of cooling air to the required quantity of cooling air is provided between the motor shaft (3) and the fan wheel (2),
- wherein it is possible as from a predeterminable motor speed for the fan wheel speed to be reduced in relation to the motor speed in such a way that the driving-along effect of the slip coupling can be neutralized with increasing speed of the motor shaft until it is almost ineffective and increases again to the full driving-along effect as the motor speed drops,
- wherein the fan wheel (2) is mounted freely rotatably on the motor casing (5) by means of a mounting (4, 4') and
- wherein the motor shaft (3) bears permanent magnets (6) and the hub (7) of the fan wheel (2) has an electrically conductive part or the fan wheel is provided with permanent magnets and the motor shaft is provided with an electrically conductive part.

2. The electromotive drive as claimed in claim 1, characterized in that the fan wheel (2) is mounted in a motor bearing plate of the motor casing (5).

3. The electromotive drive as claimed in claim 1 or 2, characterized in that the mounting (4, 4') of the fan wheel (2) is seated with a bearing outer race in a bearing receptacle (8) of the motor casing (5) or motor bearing plate and an annular formation (9) on the fan wheel hub (7) is supported against the rotating bearing inner race of the fan wheel bearing (4, 4').

4. The electromotive drive as claimed in claim 1, characterized in that the electrically conducting part of the fan wheel or of the motor shaft forming the electromagnetic slip coupling with the permanent magnets (6) of the motor shaft (3) or of the fan wheel (2) comprises a sleeve (10) of electrically conductive material, such as a copper sleeve.

5. The electromotive drive as claimed in one of claims 1 to 4, characterized in that the permanent magnets (6) and/or the sleeve (10) are arranged in an annular or segmentally annular manner on the hub (7) of the fan wheel (2) or on the motor shaft (3).

6. The electromotive drive as claimed in one of claims 1 to 5, characterized in that the fan wheel (2) has a hub (7) of nonmagnetic material, such as aluminum, or in that the fan wheel consists of plastic and a sleeve (10) of electrically conductive material is fitted into the fan wheel hub.

7. The electromotive drive as claimed in one of claims 1 to 6, characterized in that the parts of the electromagnetic slip coupling (6, 10) are arranged in coaxial or radial arrangement in relation to the motor shaft (3).

8. The electromotive drive as claimed in one of claims 1 to 7, characterized in that the motor shaft bears permanent magnets and segments are cut out in the shaft of the fan wheel, or in that the fan wheel is provided with permanent magnets and the motor shaft has segmental cutouts over its circumference in such a way that, in the interaction of the segmented fan wheel hub with the permanent magnets of the motor shaft, or in the interaction of the segmented motor shaft with the permanent magnets of the fan wheel, and dependent on the motor speed, the speed limiting and governing device is effective.

9. The electromotive drive as claimed in one of claims 1 to 7, characterized in that the center of the permanent magnets of one part of the slip coupling is axially offset in relation to the center of the other part of the slip coupling, forming a cage.

10. The electromotive drive as claimed in claim 9, characterized in that the mounting of the fan wheel in the motor casing or in the motor bearing plate comprises a single bearing.

11. The electromotive drive as claimed in one of claims 1 to 10, characterized in that one part of the slip coupling comprises one or more bar magnets fitted in bores of the motor shaft or in bores of the fan wheel.

12. The electromotive drive as claimed in one of claims 1 to 11, characterized in that at least one fan wheel (2) for encapsulated or enclosed-ventilated electric motors (1) for rail vehicles and rail-bound vehicles for suction or pressure ventilation is freely mounted and formed on at least one motor bearing plate (5).

13. The electromotive drive as claimed in one of claims 1 to 12, characterized in that the parts of the electromagnetic slip coupling (6, 10) are dimensioned such that the maximum breakdown torque or the highest driving-along effect between the motor shaft (3) and the fan wheel (2) is reached at a predetermined motor speed, which is sufficient to overcome the drop in pressure of the aerodynamic circuit.

14. The electromotive drive as claimed in one or more of claims 1 to 13, characterized in that it is intended for three-phase traction motors capable of being operated at high speeds.